WHAT IS CLAIMED IS:

1. A semiconductor device comprising:

a wiring substrate including a main surface, an insulating film formed on the main surface, and a plurality of electrodes formed on the main surface;

a semiconductor chip having a main surface and a back surface, further having a plurality of semiconductor elements and a plurality of electrodes both formed on the main surface, the semiconductor chip being fixed to the wiring substrate in a state in which the back surface thereof confronts the main surface of the wiring substrate;

conductive wires for connecting the electrodes on the main surface of the wiring substrate with the electrodes on the semiconductor chip; and

a seal member which covers the semiconductor chip, the main surface of the wiring substrate and the electrodes,

wherein the electrodes on the wiring substrate are arranged around the semiconductor chip,

wherein the insulating film has a first portion formed between the semiconductor chip and the main surface of the wiring substrate, a second portion formed between an outer periphery of the semiconductor chip and the electrodes on the wiring substrate, and a groove formed between the first portion and the second portion, and

wherein the seal member and the wiring substrate have side faces cut by dicing.

2. A semiconductor device according to claim 1, wherein the adhesive is provided in the interior of the groove and is not provided in the portion where the electrodes on the wiring substrate and the conductive wires are connected together.

3. A semiconductor device according to claim 2, wherein the adhesive is not provided on the second portion of the insulating film.

4. A semiconductor device according to claim 3, wherein the groove has such a sectional area as a protruding portion of the adhesive does not get over the groove.

5. A semiconductor device according to claim 1, wherein the electrodes on the main surface of the wiring substrate are each covered with the insulating film from a peripheral edge thereof to a side face portion thereof.

6. A semiconductor device according to claim 1, wherein the electrodes on the main surface of the wiring substrate are arranged along a center of an opening groove formed by partially removing the insulating film.

7. A semiconductor device according to claim 1, wherein the groove extends through the insulating film.

8. A semiconductor device according to claim 1, wherein

the adhesive covers a part of end faces of the semiconductor chip and is not provided on the main surface of the semiconductor chip.

9. A semiconductor device according to claim 8, wherein the adhesive protrudes at a portion of 70% or more of the chip end faces.

10. A semiconductor device according to claim 1, wherein the groove extends up to below the semiconductor chip.

11. A semiconductor device according to claim 1, wherein a plurality of wiring lines are formed between the main surface of the wiring substrate and the back surface of the semiconductor chip, and the first portion of the insulating film is formed between the plural wiring lines and the back surface of the semiconductor chip.

12. A semiconductor device according to claim 1, wherein the adhesive is an insulating resin.

13. A semiconductor device according to claim 1, wherein the distance from end faces of the wiring substrate and the seal member to an end face of the semiconductor chip is not longer than 0.8 mm.

14. A semiconductor device according to claim 1, wherein a plurality of semiconductor chips are mounted on the main surface of the wiring substrate.

15. A semiconductor device according to claim 1, wherein a

plurality of semiconductor chips of the same function are mounted on the main surface of the wiring substrate.

16. A semiconductor device according to claim 1, wherein the insulating film has a third portion formed between the plural electrodes on the wiring substrate and end portions of the wiring substrate.

17. A semiconductor device according to claim 1, wherein the thickness of the first portion of the insulating film is equal to or larger than the thickness of the second portion of the insulating film.

18. A semiconductor device according to claim 1, wherein the groove extends through the insulating film, and wiring lines on the wiring substrate are exposed to a bottom of the groove.

19. A semiconductor device according to claim 1, wherein the groove spans between the back surface of the semiconductor chip and the main surface of the wiring substrate.

20. A semiconductor device according to claim 1, wherein the semiconductor chip is quadrangular in shape and the groove is formed along each of the four sides of the semiconductor chip.

21. A semiconductor device according to claim 20, wherein the first and second portions of the insulating film are

connected with each other at a corner portion of the quadrangular shape.

22. A semiconductor device according to claim 16, wherein a bonding force between wiring lines on the wiring substrate and the seal member is small in comparison with a bonding force between the insulating film and the seal member.

23. A semiconductor device according to claim 1, wherein a bonding force between the adhesive and the seal member is small in comparison with a bonding force between the insulating film and the seal member.

24. A semiconductor device according to claim 1, wherein the adhesive is more hygroscopic than the seal member.

25. A method of manufacturing a semiconductor device, comprising the steps of:

providing a wiring substrate on which a plurality of product forming areas are arrayed, the wiring substrate having wiring lines on both a main surface thereof in the product forming areas and a back surface thereof opposite to the main surface, the wiring lines on the main surface and the back surface being electrically connected with each other through conductors;

fixing semiconductor chips respectively to the product forming areas on the main surface of the wiring substrate

through a pasty adhesive;

connecting electrodes formed on an upper surface of each of the semiconductor chips and electrodes formed on the main surface of the wiring substrate electrically with each other through conductive wires;

clamping the wiring substrate between a lower mold and an upper mold of a molding die in a transfer molding apparatus to form a block molding package on the main surface side of the wiring substrate so as to cover each of the semiconductor chips and each of the connecting means; and

dividing the wiring substrate and the block molding package, which are superimposed one on the other, longitudinally and transversely at predetermined positions to form plural semiconductor devices,

wherein in each of the product forming areas, a groove is formed between the electrodes formed on the main surface of the wiring substrate and each of semiconductor chip mounting portions for mounting the semiconductor chips, allowing a protruding portion of the pasty adhesive flowing out to the outside of each of the semiconductor chips when the semiconductor chips are fixed to the wiring substrate to stay in the groove so as not to reach the electrodes.

26. A method according to claim 25, wherein the groove is

formed to have such a sectional area that the protruding portion of the pasty adhesive does not get over the groove.

27. A method according to claim 25, wherein an insulating film is formed on the main surface of the wiring substrate, surfaces of the electrodes on the wiring substrate are exposed from the insulating film, and the semiconductor chips are fixed onto the insulating film through the pasty adhesive.

28. A method according to claim 27, wherein the groove extends through the insulating film.

29. A method according to claim 27, wherein the electrodes on the main surface of the wiring substrate are arranged along a center of an opening groove formed in the insulating film.

30. A method according to claim 25, wherein the plural product forming areas are arrayed longitudinally and transversely on the wiring substrate.

31. A method of manufacturing a semiconductor device, comprising the steps of:

providing a wiring substrate including a main surface, an insulating film formed on the main surface, and a plurality of electrodes formed on the main surface, a surface of the plurality of electrodes being exposed from the insulating film;

providing a semiconductor chip having a main surface and a back surface, a plurality of semiconductor elements and a plurality of electrodes being formed on the main surface of the semiconductor chip;

fixing the semiconductor chip to the insulating film through a pasty adhesive;

after the fixing step, connecting one end of a plurality of conductive wires to the plurality of electrodes on the main surface of the wiring substrate;

covering the semiconductor chip, the main surface of the wiring substrate and the plurality of conductive wires with a sealing resin;

wherein previous to the fixing step, a groove is formed between the plurality of electrodes formed on the main surface of the wiring substrate and the semiconductor chip, and the fixing step is performed so as to allow a

protruding portion of the pasty adhesive flowing out to the outside of the semiconductor chip to stay in the groove so as not to reach the plurality of electrodes formed on the main surface of the wiring substrate, and

wherein the pasty adhesive is formed on a peripheral surface of the semiconductor chip as a slope surface by a raised portion of the pasty adhesive.

32. A semiconductor device according to claim 31, wherein the plurality of conductive wires are electrically connected between the plurality of electrodes on the main surface of the wiring substrate and the plurality of electrodes on the main surface of the semiconductor chip.